

Strategic Plan

**Division of Epidemiology and Prevention Research
(DEPR)**

**National Institute on Alcohol Abuse and Alcoholism
(NIAAA)**

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National Institute on Alcohol Abuse and Alcoholism

Maryland Public Health Association Meeting

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Contributors to the DEPR Strategic Plan

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Purpose: Strategic Plan

- DEPR was a new Division at NIAAA
- Need to develop a mission statement for the Division
- Identify near-term research priorities in alcohol epidemiology and prevention
- Communicate our research priorities to alcohol researchers
 - Post-plan for public comment
 - Notified all DEPR grantees
 - NIAAA Extramural Advisory Board Review
 - Develop and Post
 - Program Announcements
 - RFAs



Methods

- Identify alcohol attributable mortality and years of life lost to alcohol in the U.S.
- Examine alcohol-related morbidity and social problems
- Examine trends in alcohol-related morbidity and mortality
- Review recent research literature on major sources of alcohol related mortality, morbidity, and problems
- Review current research grant portfolio to see if research undertaken addressed major needs



DEPR Grant and Grant Dollar Allocation-Summer 2007

- 245 projects
- \$100 million
- Half underage and college age drinking
- Half Epidemiology and half prevention



Considerations

- DEPR strategic planning undertaken in the context of
 - Institute-wide strategic planning
 - Research initiatives being promoted by NIAAA teams
 - e.g. Underage, Mechanisms of Behavior Changes, Medication Development, Genes & Environment, FAS, AIDS, etc.
- Shrinking NIH/NIAAA budget- Need to identify economical priorities coordinated with other institute initiatives
- Research priorities of related NIH institutes and other Agencies, e.g. NIDA, NHTSA, CDC, SAMSHA, etc



Division of Epidemiology and Prevention Research (DEPR)

Research Priorities

1. Enhance Measurement and Evaluation of Trends in Alcohol Related Mortality and Morbidity
 - Refine estimates of
 - Alcohol Attributable Fractions
 - Disability Adjusted Life Years (DALYs)
 - Examine key sub-populations according to sex, age, race/ethnicity
 - Examine dangers over time
 - Assess the feasibility and utility of testing all injury deaths for alcohol



Alcohol Attributable Deaths in the United States 2001

- 75,000
- 3rd leading cause of preventable deaths

(Source: Midanik, MMWR 2004)



Alcohol Acute Conditions 40,933

National Institute on Alcohol Abuse and Alcoholism

Motor Vehicle Traffic	13,674
Homicide	7,655
Suicide	6,995
Falls	4,766
Poisoning (Alcohol & Alcohol Other)	4,297
Fire Injuries	1,167
Drowning	812
Other	1,617

Source: Midanik et al. MMWR 2004



- Injuries are the leading cause of deaths among youth in the U.S. ages 1-44
- Alcohol is the leading contributor to injury death
- Alcohol injury deaths account for twice as many years of life lost as chronic alcohol disease deaths

(Sources: CDC, Smith 1999)



Chronic Disease Deaths 34,833

Alcohol Liver Disease	12,201
Liver Cirrhosis Unspecified	6,719
Alcohol Dependence Syndrome	3,520
Alcohol Abuse	2,321
Stroke (Hemorrhagic & Ischemic)	2,401
Hypertension	1,184
Pancreatitis (Acute & Chronic)	966
Other	4,521

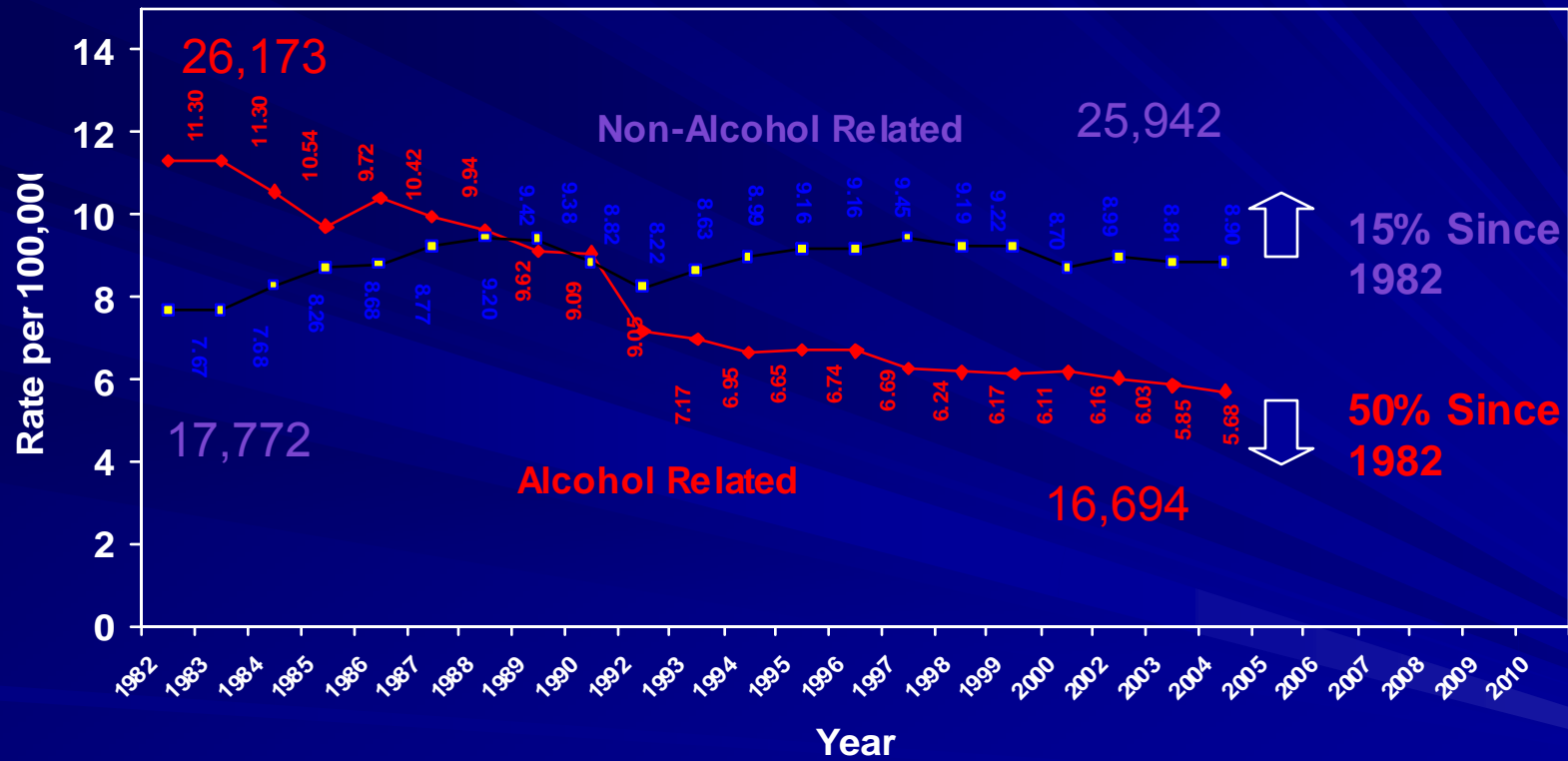


Disability Adjusted Life Years (DALYs)

- Alcohol is the 5th leading cause of DALYs among males
 - Ischemic Heart Disease
 - Road Traffic Injury
 - Lung Cancer
 - HIV/AIDS
 - Alcohol
- Alcohol is the 11th leading cause of DALYs among women

Source: McKenna, Am.J. Preventive Med 2005

United State Alcohol and Non-Alcohol Related Traffic Fatalities Per 100,000 Population 1982-2004



	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Alcohol-Related Fatalities	11.30	11.30	10.54	9.72	10.42	9.94	9.62	9.09	9.05	7.99	7.17	6.95	6.65	6.74	6.69	6.24	6.17	6.11	6.16	6.12	6.03	5.85	5.68
Non-Alcohol-Related Fatalities	7.67	7.68	8.26	8.68	8.77	9.20	9.42	9.38	8.82	8.47	8.22	8.63	8.99	9.16	9.16	9.45	9.19	9.22	8.70	8.65	8.99	8.81	8.83

Sources: Fatality Analysis Reporting System, National Highway Traffic Safety Administration, U.S. Census Bureau— Courtesy of R. Hingson, NIAAA

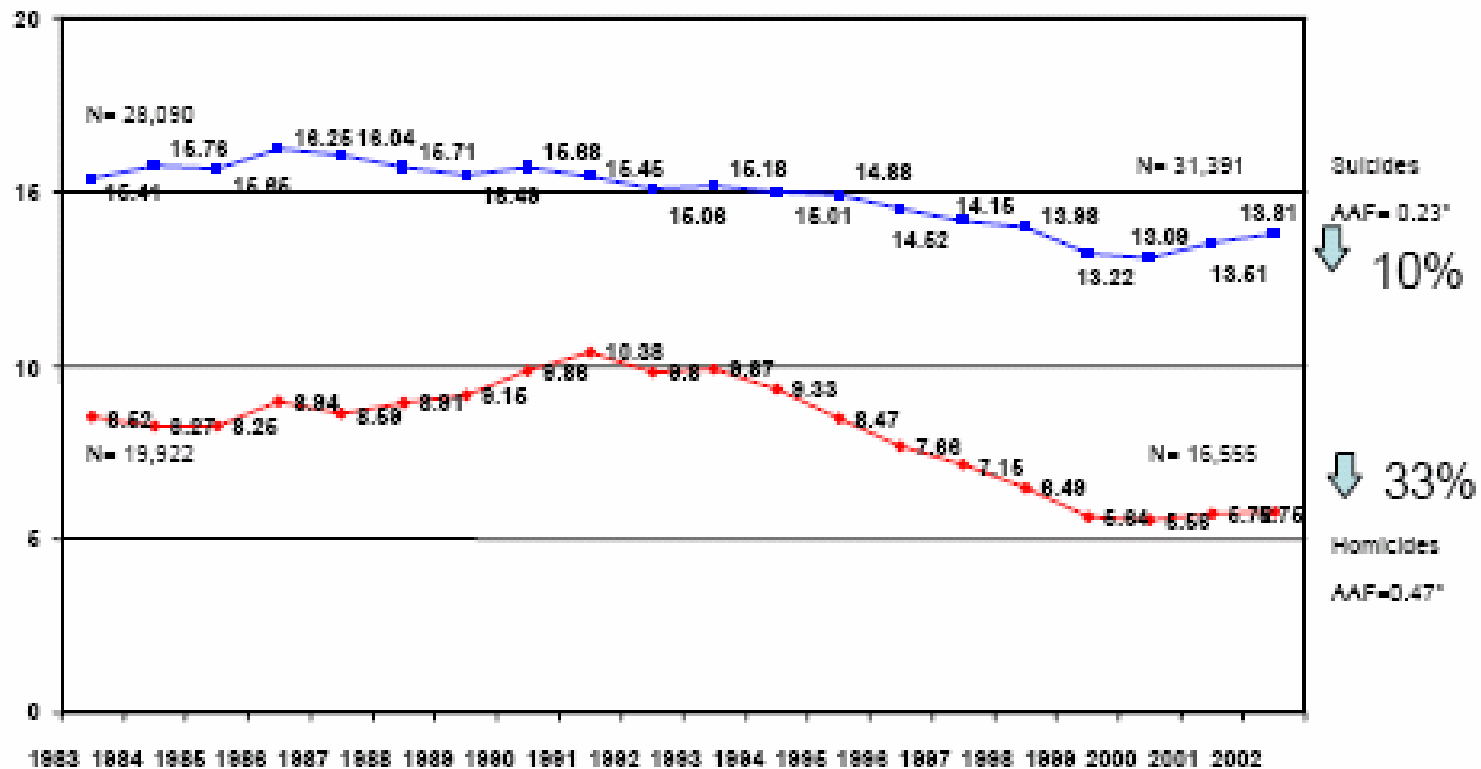


- From 1982-2001 in the U.S, 153,168 lives were saved by decreased drinking and driving. This is more than the combined numbers of lives saved, 149,318, by increased seat belt use (129,207), airbag prevalence (4,305), increase use of motorcycle helmets (6,475) and by increased use of bicycle helmets (239).

Source: Cummings, Rivara, Olson, Smith. Injury Prevention, 2006.



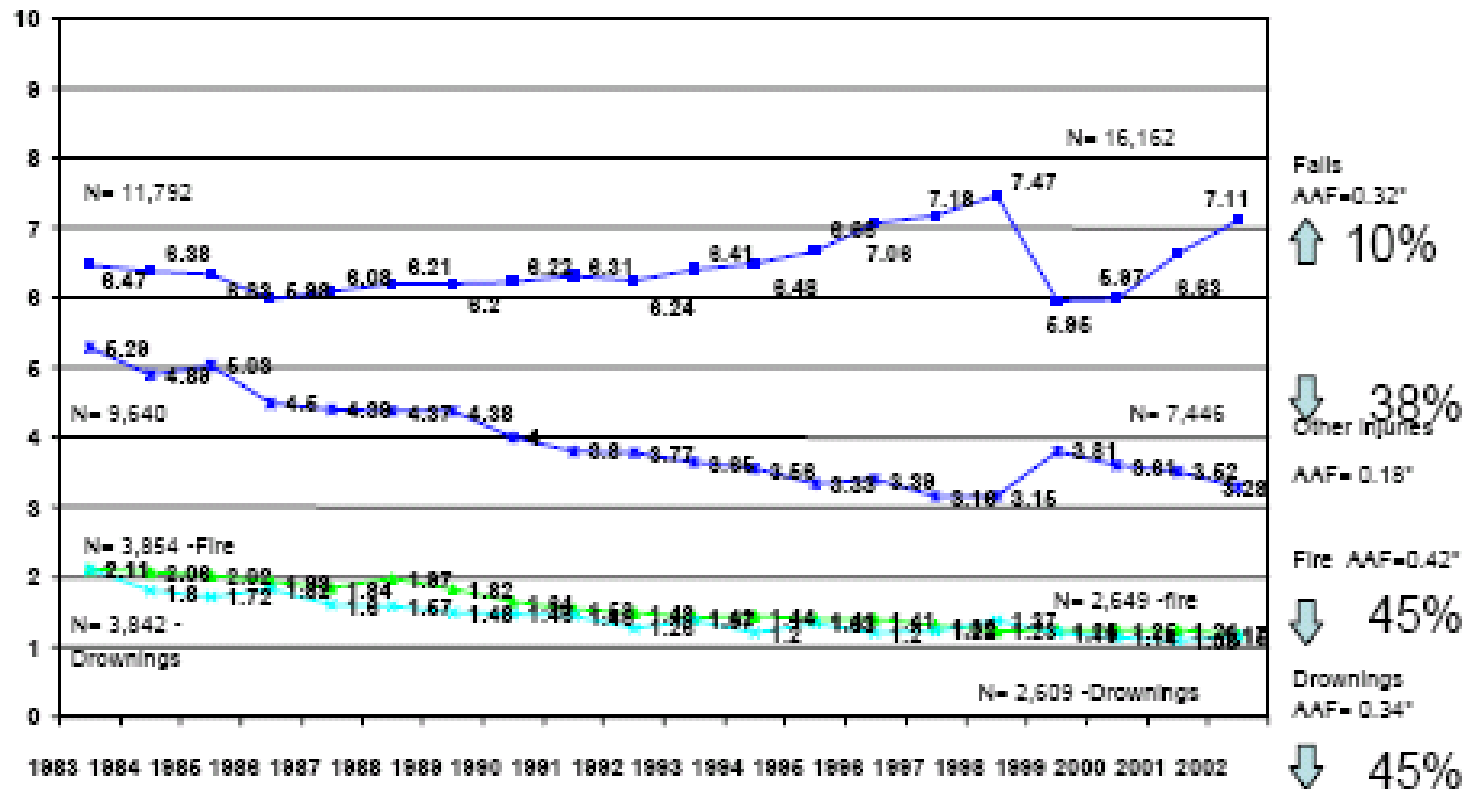
Homicides and Suicides 1983-2002 Rates/100,000 Population



Source: CDC WISQARS, US Census Data 2005



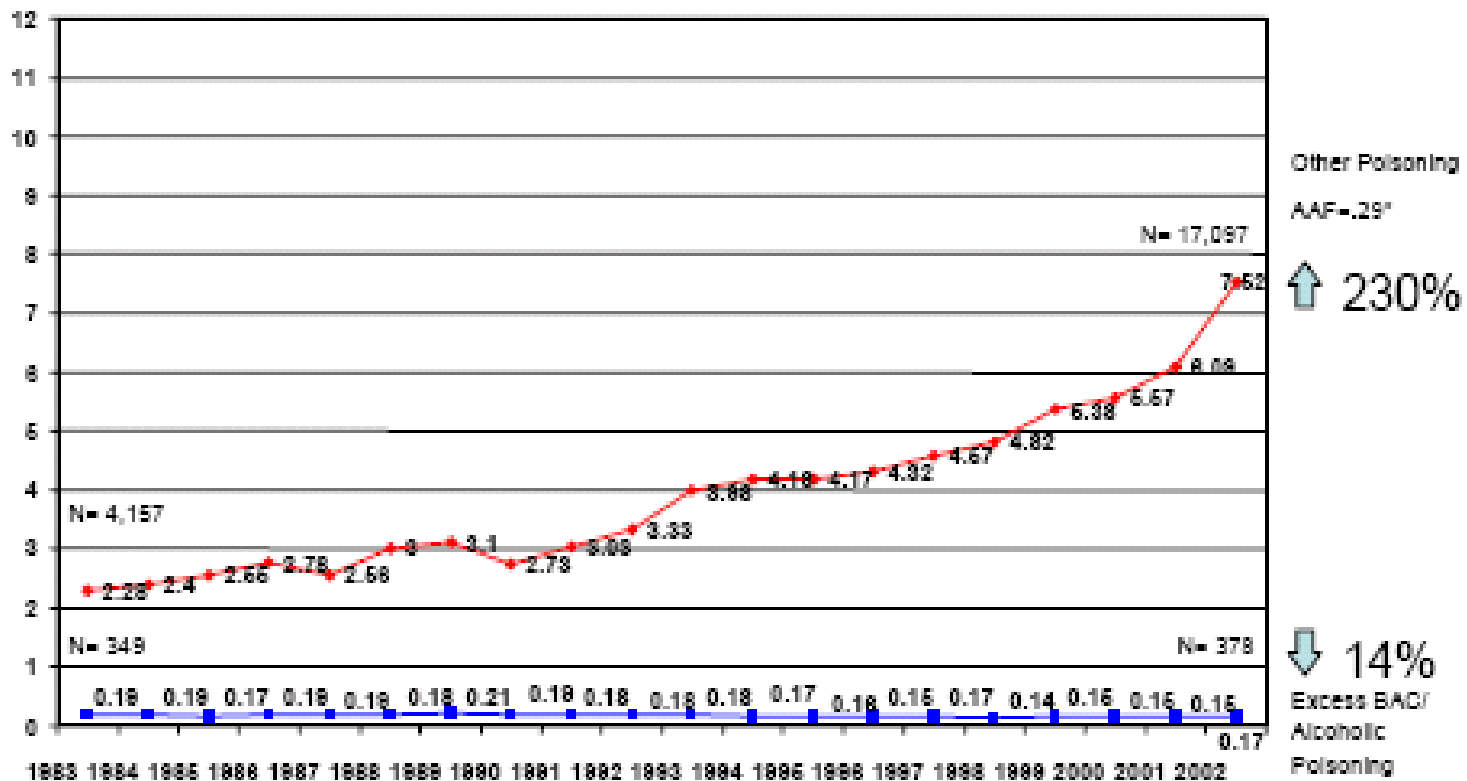
Falls, Fire, Drownings, and Other Injuries 1983-2002 Rates/100,000 Population



Source: CDC WISQARS, US Census Data 2005



Excess BAC/Alc. Poisoning and Other Poisonings 1983-2002 Rates/100,000 Population



Source: CDC WISQARS, US Census Data 2005



Nationwide

All injury deaths in each state and community should be tested for alcohol



STOP

Underage
Drinking

CADCA
cadca.org
-800-542-2322

X

Sec. 101. Sense of Congress.

TITLE II—INTERAGENCY COORDINATING COMMITTEE; ANNUAL REPORT ON STATE UNDERAGE DRINKING PREVENTION AND ENFORCEMENT ACTIVITIES

Sec. 201. Interagency coordinating committee on the prevention of underage drinking.

Sec. 202. Annual report on State underage drinking prevention and enforcement activities.

Sec. 203. Authorization of appropriations.

TITLE III—NATIONAL MEDIA CAMPAIGN

Sec. 301. National media campaign to prevent underage drinking.

TITLE IV—INTERVENTIONS

Sec. 401. Community-based coalition enhancement grants to prevent underage drinking.

Sec. 402. Grants directed at preventing and reducing alcohol abuse at institutions of higher education.

TITLE V—ADDITIONAL RESEARCH

Sec. 501. Additional research on underage drinking.

Sec. 502. Authorization of appropriations.

7 SEC. 2. DEFINITIONS.

8 For purposes of this Act:

- 9 (1) The term “alcohol beverage industry”
10 means the brewers, vintners, distillers, importers,
11 distributors, and retail or online outlets that sell or
12 serve beer, wine, and distilled spirits.

•HR 864 EH



National Institute on Alcohol Abuse and Alcoholism



The Surgeon General's Call to Action To Prevent and Reduce Underage Drinking

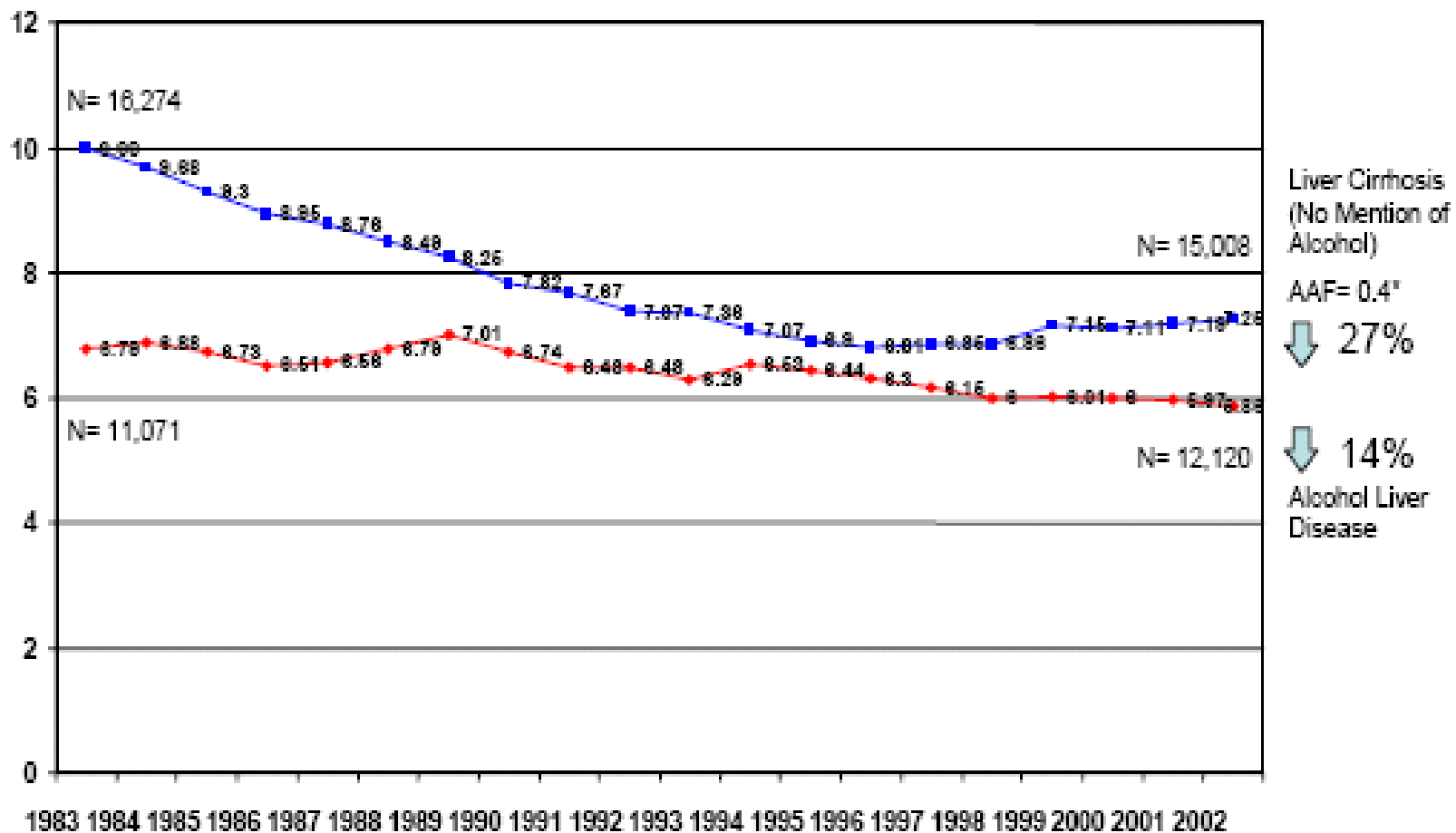
2007



U.S. Department of Health and Human Services



Liver Cirrhosis and Alcohol Liver Disease 1983-2002 Rates/100,000 Population



Source: CDC WISQARS, US Census Data 2005



DEPR Research Priority

2. Examine relations between alcohol and nutrition and their impact on health across of the life span.

Understand the role of alcohol –nutrition interactions in the development of Fetal Alcohol Syndrome

- Alcohol related acute and chronic diseases eg. Liver disease, cardiovascular, cancers, diabetes, depression, obesity

Cultural considerations are important as intakes of both alcohol and diet differ according to racial/ethnic groups.



Health Outcomes

- Liver disease
- Cardiovascular disease
- Cancers
- Depression
- Diabetes
- Fetal alcohol effects
- Malnutrition
- Obesity
- Osteoporosis/hip fractures

Questions

- **Can nutrition reduce alcohol's harmful effects?**
- **Can nutrition increase alcohol's possibly beneficial effects?**
- **Is nutrition an important confounder in studies of alcohol and health outcomes?**



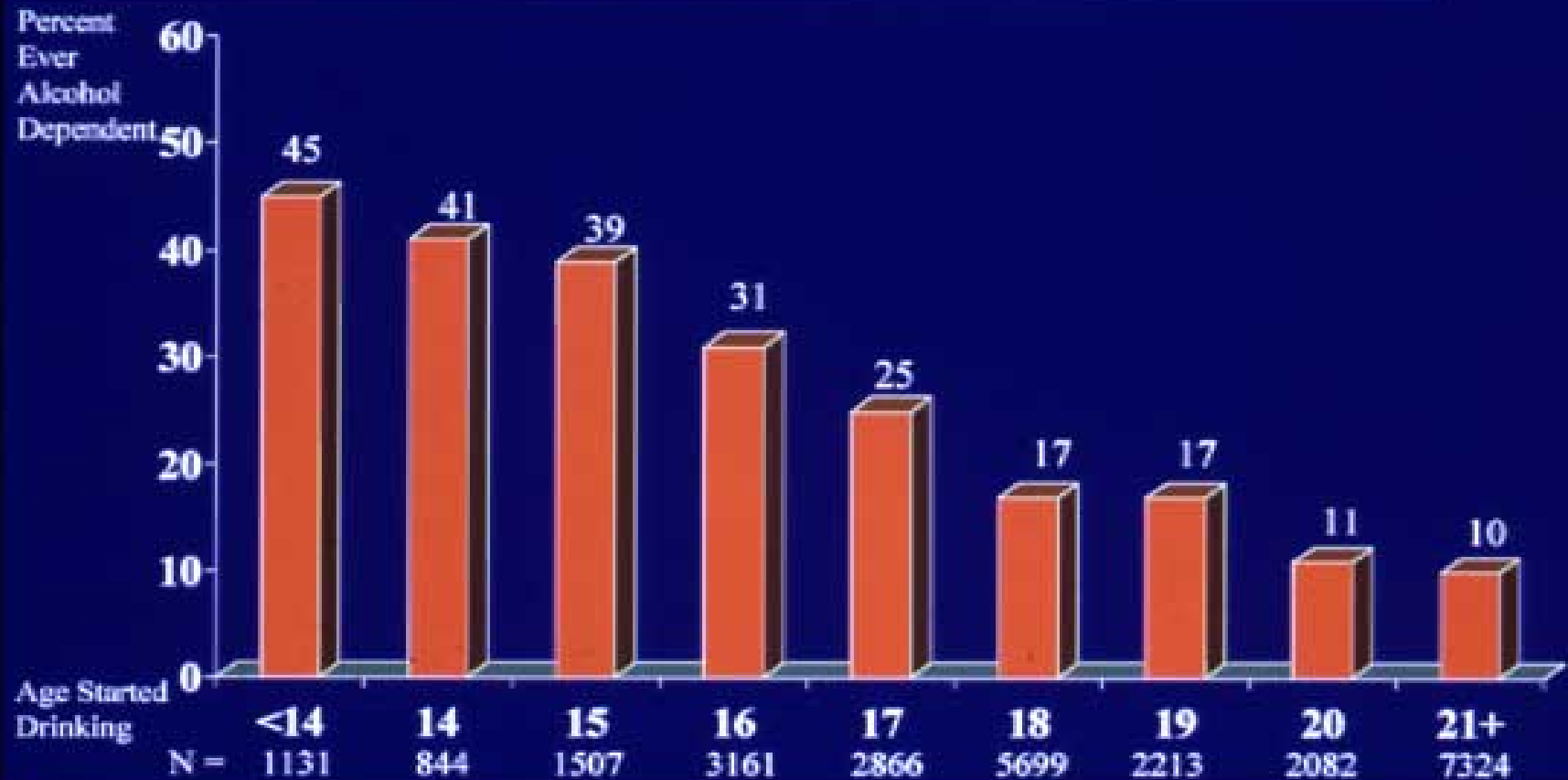


DEPR Research Priority

3. Expand Knowledge Regarding Screening and Brief Intervention in Underage and Young Adult Populations
 - Need to develop screening for adolescent
 - Test screening and brief intervention in a variety of health care settings
 - Explore barriers to screening and brief interventions with adolescents
 - Assess strategies to remove barriers
 - Assess long-term benefits of early screening and interventions
 - Assess the related effectiveness of intervening early versus later in the life course



Prevalence of Lifetime Alcohol Dependence According to Age of Drinking Onset



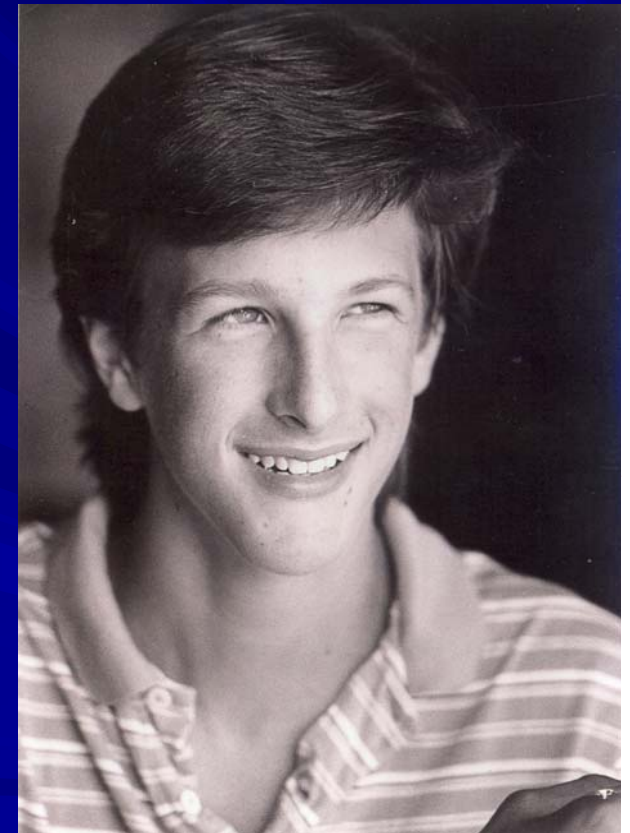
The younger people are when they start to drink, the greater the likelihood they will develop alcohol dependence.

Source: Grant and Dawson (1997) *J. Substance Abuse*



Earlier Age Drinking Onset Also Related to:

- More rapid development of dependence
- Dependence by age 25
 - Of ever dependent
 - 47% before age 21
 - 2/3 before age 25
- Chronic Relapsing Dependence
 - Longer episodes
 - Multiple episodes
 - Past year dependence
 - More symptoms
 - Early dependents less likely to seek help



Brian Paul McKelvey

Hingson, Heeren and Winter 2006 *Archives Pediatric and Adol Med*

Hingson, Heeren and Winter 2006 *Pediatrics*



Gentilello

Brief Motivational Alcohol Intervention in a Trauma Center

Annals of Surgery, 1999

- 46% of injured trauma center patients age 18 and older screened positive for alcohol problems.
- Half (N=336) randomly allocated to receive 30 minute brief intervention to reduce risky drinking and offers links to alcohol treatment



Gentilello

Brief Motivational Alcohol Intervention in a Trauma Center

Annals of Surgery, 1999

- Reduced alcohol consumption by an average 21 drinks per week at 1 year follow up
- 47% reduction in new injuries requiring treatment in ED
- 48% reduction in hospital admissions for injury over 3 years
- 23% fewer drunk driving arrests



Brief Alcohol Intervention for Older Adolescents

J. Consulting and Clinical Psychology Monti et al. (1999)

- 94 ED patients, mean age 18.4, injured after drinking
- Half randomly allocated to a 35-40 minute motivational intervention to reduce drinking and related risky behaviors such as DWI

Results at six months	MI	SC	
Drinking and driving	62%	85%	SC had 4 times more drinking and driving occasions
Moving Violations	3%	23%	
Alcohol-related injury	21%	50%	SC had 4 times more alcohol-related injury



Sixteen Studies Provide Strong Support for the Efficacy of This Approach Among College Students (Larimer Addictive Behavior 2007)

Marlatt, 1998

Anderson et. Al., 1998

Larimer, 2000

D'Amico & Fromme
2000

Dimeff, 1997

Aubrey, 1998

Monti, 1999

Baer, 2001

Barnett et al., 2004

- Borsari and Carey, 2005
- Labrie 2002
- Gregory 2001
- LaChance 2004
- Murphy and Colleagues
2001
- Murphy and Colleagues
2004
- Carey et al., 2006



Implementation Gap

- Fewer than
 - 1/2 of pediatricians screen all adolescents for use of alcohol and drugs
 - 1/4 screen for drinking and driving.
- Pediatric Medical Care Providers considerably underdiagnose alcohol use, abuse, and dependence among patients ages 14-18.
- 1.5 million 12-17 year olds need alcohol treatment
- Only 216,000 14% received treatment

Sources: American Academy of Pediatrics, 1997; Wilson, Sheritt, Gates, Knight *Pediatrics*, 2004; National Household Survey on Drug Use and Health, 2003



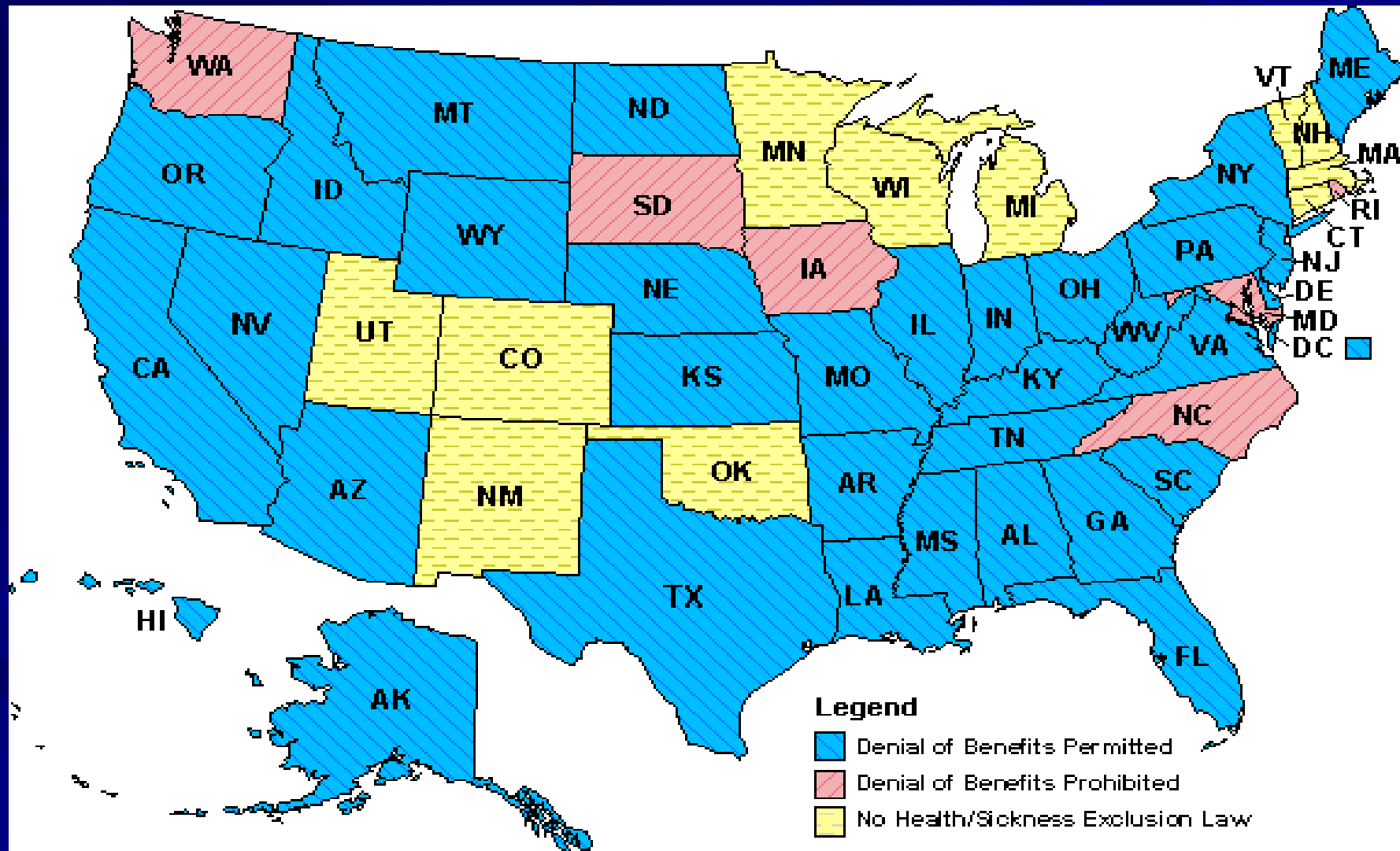
Implementation Gap

19% of College Students 18-24 met DSM IV
Alcohol Abuse or Dependence Criteria
5% of them sought treatment in the past
year

**Source: National Epidemiologic Study of Alcohol
Related Conditions 2002**



Insurers' Liability for Health/Sickness Losses Due to Intoxication ("UPPL") as of January 1, 2006





DEPR Research Priority

4. Expand Comprehensive Community interventions to Reduce Alcohol Related Injuries and other Problems
 - Assess the relative effectiveness of environmental oriented interventions US screening brief intervention, family intervention and treatment
 - Assess the impact of interventions that combine these approaches
 - Assess more outcomes than drinking, impaired driving, and traffic injuries
 - Alcohol related unintentional injuries
 - Homicide, suicide, sex assaults, child abuse
 - Academic and job performance
 - Illicit drug use
 - Chronic disease liver cirrhosis



Comprehensive Community Interventions

- Involve multiple departments of city government and private citizens
- Use multiple program strategies
 - Education
 - Media advocacy
 - Community organizing and mobilization
 - Environment policy change
 - Heightened enforcement
 - Expand alcohol treatment



Successful Comprehensive Community Interventions

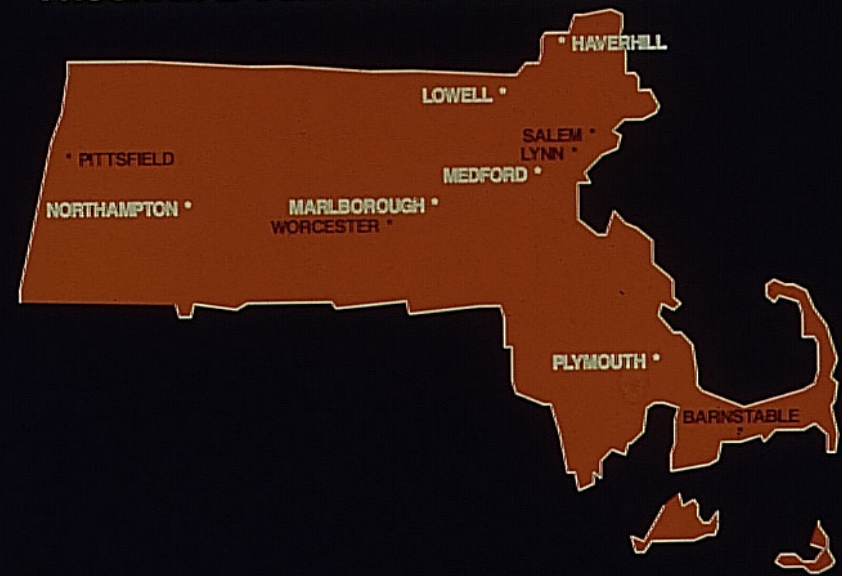
- Saving Lives Program Hingson (1996)
- Project Northland Perry (1996)
- Communities Mobilizing for Change Wagenaar (2002)
- Community Trials Holder (2000)
- A Matter of Degree Weitzman (2004)
- Clapp et al. (2005)
- Fighting Back Hingson (2005)



Program Components

- School based education
- Community education
- Increased police enforcement
- Business for safety
- Alcohol beverage server education
- Community task forces – key public and private sector community leaders
- Full-time coordinator Mayor's office
- Encourage local initiatives
- Evaluation feedback

MASSACHUSETTS SAVING LIVES PROGRAM PROGRAM & COMPARISON COMMUNITIES





Saving Lives vs. Rest of Mass. 5 Pre Program Years Compared to 5 Program Years

	<u>Pre-Program</u>	<u>Program</u>	<u>Change</u>
Fatal Crashes	178	120	↓ 25%*
Fatal Crashes Involving Alcohol	69	36	↓ 42%*
Fatally Injured Drivers with Positive BAC	49	24	↓ 47%*
Fatal Crashes Involving Speeding	68	33	↓ 27%*
Pedestrian Fatalities	45	33	↓ 18%*
Drivers in Fatal Crashes Age 15-25	98	45	↓ 39%*

*p<0.05



Communities Mobilizing for Change

- Interventions to Reduce Availability:
 - Merchants record underage buy attempts
 - Beer kegs prohibited at University Homecoming
 - Policies to discourage motels from permitting underage drinking parties
 - Security at high school dances
 - Model local ordinances to restrict underage access to alcohol
 - Compliance checks

Source: Wagenaar et al., *J. Studies on Alcohol*, 2000



Communities Mobilizing for Change

Results:

- 17% increase in outlets checking age ID
- 24% decline in bar and restaurant sales
- 25% decrease in the proportion of 18-20 year olds attempting alcohol purchase
- 17% decline in the proportion of older teens providing alcohol to younger teens
- 7% decrease in the percent under 21 who drank
- 14% decline in alcohol traffic injuries, drivers 18-20

Source: Wagenaar et al., *J. Studies on Alcohol*, 2000



Community Trials

Intervention:

- Reduce youth alcohol availability
- Drinking and driving enforcement
- Alcohol outlet density reduction
- Community mobilization & media
- Advocacy
- Responsible alcohol service

Results:

- Self reported DWI cut in half
- 10%-11% decrease in single vehicle night crashes
- 43% decrease in emergency department alcohol related assault admissions

Source: Holder et al., *JAMA* (2000)



“Mountain of Beer”



A Matter of Degree (AMOD)

Weitzman et al. American Journal of Preventive Medicine. 2004

- College/ Community Partnerships
- Environmental strategies to reduce drinking problems:
 - Keg registration
 - Mandatory responsible beverage service
 - Police wild party enforcement
 - Substance free residence halls
 - Advertising bans



A Matter of Degree (AMOD)

Weitzman et al. American Journal of Preventive Medicine. 2004

- AMOD achieved reductions among college students in
 - Binge drinking
 - Driving after drinking
 - Alcohol related injuries
 - Being assaulted by other drinking college students



Sacramento Neighborhood Alcohol Prevention Project (SNAPP)

Results

- Reduction in alcohol sales to minors
- Reductions in assaults reported by police
- Emergency medical services reductions
 - Overall
 - Assaults
 - Motor Vehicle Crashes
- Conclusions: Comprehensive community interventions can be successfully applied at the neighborhood level

Treno, et al. J. Studies on Alcohol/Drugs, 2007



State Coalitions to Reduce Underage Drinking

- 10 State Coalitions vs. the Rest of the U.S. 1997-2004
- Significant Declines
 - Frequency of Drinking 12th Graders
 - Binge Drinking 12th Graders
 - Getting Drunk 8th and 12th Graders
 - Drove After Drinking 12th Graders

Wagenaar et al. 2006 Am. J. Prev. Medicine



Fighting Back Program Selected Interventions

Limit Alcohol Availability

- Youth access compliance check surveys
- Responsible beverage service training
- Monitoring and closing problem liquor outlets
- Bill board restrictions

Expand Treatment

- Sales tax increase for expanded treatment
- New treatment programs- courts, jails, health care agencies, public housing
- Emergency department screening/brief interventions
- New inpatient, outpatient and recovery programs

Source: **Hingson et al. 2005**



National Institute on Alcohol Abuse and Alcoholism

Greater Relative Reduction in Alcohol-Related Fatal Crashes VS Fatal Crashes with Zero BAC

Pooled Effects

BAC .01%+
VS Zero BAC

Drivers

All Ages

16-20

5 FB sites
VS controls

↓ 22%
P=.01

↓ 26%
P=.08

3 FB sites
targeting
entire
communities
* VS controls

↓ 31%
P<0.001

↓ 47%
P=.12



Courtney Birch

Communities: Kansas City, MO, *Milwaukee, WI, San Antonio, TX,
*Santa Barbara, CA, and *Vallejo, CA

DEPR

5. Other research priorities

- Alcohol Polices (APIS)
- Special Populations
- Alcohol advertising and Promotion





Primary Reason

Because public policies have been effective in reducing alcohol-related harms in the past, we propose to continue to emphasize research on public policy.



Evidence of policy effect

- Minimum legal drinking age
(O'Malley and Wagenaar 1991; Shults et al. 2001; Wagenaar and Toomey 2002)
- Alcoholic beverage taxation
(Chaloupka et al. 1998; Cook and Moore 2002; Kenkel and Manning 1996; Leung and Phelps 1993)



Evidence of policy effect, cont'd

- .08 per se laws

(Hingson et al. 2000; Tippetts et al 2005; Voas et al. 2000)

- Zero tolerance

(Hingson et al. 1994; Wagenaar et al. 2001; Shults et al. 2001, Voas et al. 2003; Hingson and Sleet 2006)



New Tool

Alcohol Policy Information System = APIS

www.alcoholpolicy.niaaa.nih.gov

(Online since 2003)



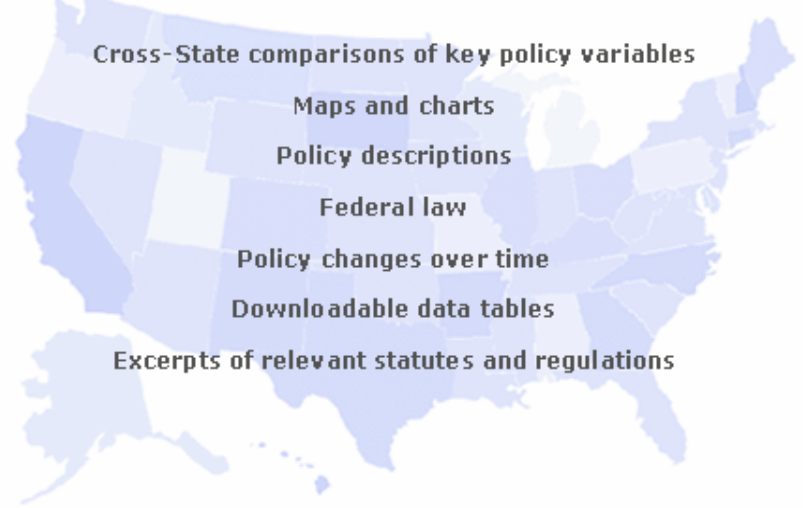
A project of the National Institute on Alcohol Abuse and Alcoholism

Alcohol Policy Information System

The Alcohol Policy Information System (APIS) is an online resource that provides detailed information on a wide variety of alcohol-related policies in the United States at both State and Federal levels. It features compilations and analyses of alcohol-related statutes and regulations. Designed primarily as a tool for researchers, APIS simplifies the process of ascertaining the state of the law for studies on the effects and effectiveness of alcohol-related policies.

The principal research tools on this Web site are 36 sets of comparison tables and supporting materials for selected alcohol policies. The items listed below are available for each of these [APIS policy topics](#).

Resources for APIS Policy Topics



In addition to these primary resources, the APIS Web site also contains a variety of other materials on alcohol policy.

Additional APIS Resources

[About alcohol policy](#)

New on the Site

On June 23, 2006, ten underage drinking policy topics were updated to 1/1/2006. For more information, see [Latest Changes](#).

Underage Drinking

Eleven APIS policy topics are collected in a special [Highlight on Underage Drinking](#) section. State-by-State summaries of these policy topics are provided in the [State Profiles of Underage Drinking Laws](#) section.



Home

What's New
[Latest Changes](#)
[Change Log](#)

About APIS
[Background](#)
[Frequently Asked Questions \(FAQs\)](#)
[Privacy](#)
[Contact APIS](#)
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APIS Policy Topics
[Topic Index](#)
[Maps and Charts](#)
[Highlight on Underage Drinking](#)
New! [State Profiles of Underage Policies](#)
[How to Search APIS Policy Topics](#)

Additional APIS Resources
[About Alcohol Policy](#)
[Enacted Bills and Adopted Regulations](#)
[Alcohol Policy Classification System](#)
[Enforcement and Compliance](#)
[NUTSA Alcohol](#)



APIS Covers

- Laws and regulations
- 1998-2006
- Effective dates
- 50 states and DC
- 36 policy topics



APIS Policy Topics

- Alcohol control systems (wholesale / retail x B,W,S)
- Alcohol beverage taxes (beer, spirits, coolers, wine x2)
- BAC limits (adults, youths, boating)
- Health insurance parity
- Insurers' liability for losses due to intoxication (UPPL)
- Vehicular insurance exclusions
- Open container laws
- Underage Drinking Policies (possession, consumption, purchase, furnishing to minors, minimum ages for sellers/servers, false IDs, use/lose, hosting underage parties)
- Keg registration
- Beverage service training and related practices
- Bans on Sunday sales of alcoholic beverages
- Alcohol and pregnancy (posted warnings, limits on criminal prosecution, civil commitment, priority access to treatment, mandatory reporting, specialized treatment programs)

Drinking Driving Laws From NHTSA added in 2006



Key Policy Outcomes

I. How do policies related to alcohol and underage drinking affect harmful outcomes?

II. Do restrictive insurance policies reduce screening and referral to treatment?



III. How does enforcement (and other aspects of policy implementation such as education and public awareness) affect outcomes?

IV. What are the mechanisms through which public policy acts to reduce harmful outcomes?



EAB Review August 2006

- **Division effort**
 - Division of Epidemiology and Prevention Research (DEPR)
 - Topic: DEPR Strategic Plan
- **Meeting held at NIAAA site on August 16-17, 2006**
- **Participants included:**
 - EAB members
 - Council members
 - Ad Hoc Experts
 - Institute Staff



Recommendations #1-2

- Encourage systematic efforts to improve and standardize measures of patterns of alcohol exposure (acute, recent, or current history, and across the lifespan) and encourage their application across different grants, institutes, countries, and the medical system.
- Encourage research to improve measures of patterns of alcohol exposure (acute, recent, chronic) across the lifespan and their effects on morbidity and mortality.



Recommendation #3

- Improve estimation of alcohol attributable fractions (AAF) for morbidity and mortality, especially for injury, by better characterizing the relationship between patterns of drinking (e.g., binge drinking) and a variety of outcomes, and encourage the collection of relevant indicators of drinking (e.g., medical examiner data).



Recommendation #4

- Replicate and generalize evidence-based environmental strategies developed in successful community trials and undertake pilot studies to develop new community strategies to address health and social outcomes.



Recommendation #5

- Encourage culturally and developmentally appropriate screening, assessment, and interventions, especially brief interventions, and use creative technologies to maximize their reach, impact, and efficiency.



Recommendation #6

- Use sub-studies or supplemental studies to a) enhance the fullest use of data and interdisciplinary research, b) encourage the collection of biological and genetic samples from single-site or collaborative epidemiological, treatment, or human laboratory studies to develop new knowledge, and c) promote the careers and training of emerging investigators.



Recommendation #7-8

- Study promising strategies for preventing the early initiation of high risk behaviors including alcohol use through partnering with other agencies, institutes, and organizations.
- Undertake outcome studies of key alcohol and other relevant public policies (e.g., weapon, tobacco, drug, traffic, etc.) to determine if they reduce excessive alcohol consumption, related harms, or both.



Outcomes

- **3 new program announcements prepared.**
- **DEPR working with other Teams and Divisions to develop new RFAs.**
- **NIAAA is exploring ways to improve estimates of DALYs, AAFs, and trends over time in alcohol attributable deaths**